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(54) **METHOD AND APPARATUS FOR CREATING INTERACTIVE WEB PAGE OBJECTS**

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(*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

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(58) **Field of Search** 707/501, 512, 707/513, 514; 345/326, 329, 330, 335, 338, 348, 349

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,708,826	*	1/1998	Ikeda et al.	707/501
5,724,595	*	3/1998	Gentner	707/501
5,727,156	*	3/1998	Herr-Hoyman et al.	395/200.49

OTHER PUBLICATIONS

Meeker, "AnimNav.java Version 1.0.0", http://www.real-time.net/~elijah/old/jindex.htm, Jan. 4, 1996, pp. 1–14.*
"Graph", http://javaboutique.internet.com/Graph/, Sun Microsystems, Sep. 19, 1996, pp. 1–10.*
Klein, "TagArea", http://javaboutique.internet.com/TagArea/, Feb. 19, 1996, pp. 1–3.*
Kay, "animateButton", http://javaboutique.internet.com/animateButton/, Sep. 23, 1996, pp. 1–5.*

* cited by examiner

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(57) **ABSTRACT**

A system and method are disclosed for creating an interactive web page. A plurality of objects are defined which are configured to have associated states. The associated states include a visible state and a hidden state. An object in the visible state is displayed and an object in the hidden state is not displayed. Subsets of objects are associated together in structures so that the state of any object within the structure is dependent on the states of other objects within the structure. The plurality of objects and the structures are placed into an hierarchy in a way which causes certain objects and structures in the hierarchy to be layered on top of other objects and structures in the hierarchy. Behaviors are associated with the objects, and each behavior includes an associated event, an associated action, and an associated target object. Each behavior is arranged so that when the associated event occurs, the associated action is performed on the associated target object. The performance of the action on the target object changes the state of the target object, and the change of state of the target object is a second event. An event processor is provided which is configured to process the events as they occur and adjust the states of the objects according to the events and according to the behaviors associated with the objects so that the objects are displayed or hidden on the web page as events occur.

19 Claims, 14 Drawing Sheets